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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,991	09/19/2003	Henry V. Allen	019963-001200US	5384

20350 7590 06/06/2005

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EXAMINER

ELLINGTON, ALANDRA

ART UNIT	PAPER NUMBER
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2855

DATE MAILED: 06/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/665,991

Applicant(s)

ALLEN ET AL.

Examiner

Alandra Ellington

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 15 March 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 4,5,9-11,15-18 and 20-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11,15-18 and 20-24 is/are allowed.
- 6) ☒ Claim(s) 4 and 5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **Non-Final Rejection**

### ***Election/Restrictions***

1. Claims 1-3, 6-8, 12-14 and 19 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 3/15/05.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 4 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Hoffman et al (6,341,528) (hereinafter Hoffman).

a. With respect to Claim 4, Hoffman discloses a pressure sensor comprising a horizontal diaphragm 4 having a top and a bottom; a silicon sidewall 1 formed using MEMS micro-machining and extending from the bottom of the diaphragm 4, the sidewall 1 having an interior side forming a backside cavity, the backside cavity having a backside opening, the interior side substantially vertical; and a boss 5 attached to the bottom of the diaphragm 4, the boss 5 separate from the sidewall 1 (col. 3 lines 12-42 {Figs. 1, 2}).

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b. With respect to Claim 5, Hoffman discloses the pressure sensor of claim 4, wherein the silicon sidewall 1 is formed using deep reactive ion etch (col. 3 lines 23-35, 63-67, col. 4 lines 14-17, 40-42).

***Allowable Subject Matter***

4. Claims 9-11, 15-18 and 20-24 are allowed.

5. The following is an examiner's statement of reasons for allowance: The reasons for allowance are based on the inclusion of:

a. In Claim 9, the interior side of the sidewall is formed using a deep reactive ion etch and is substantially orthogonal to the diaphragm, and wherein the backside opening is non-rectangular.

b. In Claim 15, the interior side substantially orthogonal to the diaphragm; and a block covering the backside opening such that a hermetic seal is formed.

c. In Claim 20, the plurality of pressure sensor includes approximately at least twenty-thousand pressure sensors, and wherein the silicon wafer is a 150mm (6 inch) wafer.

d. In Claim 21, wherein the diaphragm is less than 350 microns in length, and the diaphragm accounts for more than 10 percent of an area of the exactly one pressure sensor.

e. In Claim 22, the interior side substantially orthogonal to the diaphragm; a cap attached to the top of the diaphragm, wherein the cap and diaphragm form a reference cavity.

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**Conclusion**

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(6,651,506) (6,874,367)

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alandra Ellington whose telephone number is (571) 272-2178. The examiner can normally be reached on Monday - Friday, 7:30am - 4:00pm.


8. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on (571) 272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

9. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alandra Ellington  
Art Unit 2855



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William Oen  
Primary Examiner